METHODS We performed a retrospective double cohort study of 11241 women who delivered in Shanghai First Maternity and Infant Hospital and Shanghai Tenth People's Hospital. Multivariate logistic regression analysis was conducted to explore potential risk factors of GDM. Moreover, longitudinal comparison of ten years period were made.

RESULTS According to National Diabetes Data Group (NDDG) Standard, the incidences of GDM were 2.69% and 5.59% in 2001 and 2010, respectively. The older were the subjects group, the higher the incidence of GDM would be both in 2001 and 2010 ($P < 0.01$), and the incidences of GDM in two subgroups (25-29 yrs, 30-34 yrs group) were higher in 2010 than those in 2001. In addition, the incidence of GDM increased significantly with elevated body mass index (BMI) in 2010 ($P < 0.01$). As shown in multivariate logistic regression models, BMI and hemoglobin were independent risk factors for GDM in 2001, Odds ratio (OR) values and its 95% confidence interval (CI) were 2.54 (1.12-5.75) and 1.04 (1.01-1.06), respectively. However, independent risk factors for GDM in 2010 included BMI $\geq$ 24 kg/m^2, obstetric abnormality, history of diabetes and systolic blood pressure, OR value and 95%CI were 2.06 (1.63-2.61), 1.44 (1.04-2.00), 3.02 (1.94-4.72), 1.01 (1.00-1.02). Noteworthy, maternal age was also an independent risk factor for GDM in 2010, the older were the subjects group, the higher OR would be. OR (95%CI) of three subgroups (25-29 yrs, 30-34 yrs and over 35 yrs group) were 2.81 (1.30-6.06), 4.70 (2.18-10.15), 7.99 (3.59-17.76), respectively. Height was a protective factor for GDM, its OR (95%CI) was 0.98 (0.97-0.99).

CONCLUSIONS The increasing incidence of GDM in combined with changes of risk factors indicates a significant public burden on health services. More effective management and timely intervention regarding these high-risk pregnancies will also need to be addressed in the future.

GW26-e2968

Selenium prevents from atherosclerosis formation by maintaining antioxidant activation through the Akt/ GSK3β/ Nrf2 axis in diabetes

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OBJECTIVES The essential trace element, selenium (Se), has multiple biological activities. The present study aimed to evaluate the effect of antioxidant capacity mobilized by selenium-regulated Nrf2 on atherosclerosis formation in diabetes mellitus and possible mechanisms.

METHODS 20 male Sprague- Dawley rats were randomly assigned into 2 groups: STZ-induced diabetes with Se supplementation group (DM+SeS, 1 mg selenium/kg diet was given for 5 weeks every day) and STZ-induced diabetes with Se-deficient group (DM+SeD, ≤0.05mg selenium/kg diet was given for 5 weeks every day). Atherosclerotic plaques were stained with Oil-red-O and counterstained with hematoxylin. Both oxidative stress and antioxidant capacity were measured. Expression of phosphorylation of Akt/GSK3β and Nrf2 and Fyn expression were examined by Western blot.

RESULTS Compared with DM+SeD, Se supplementation in diabetic rats significantly increased serum Se levels (126±20ug/L in SeS vs. 40±15 ug/L in SeD group, $P<0.05$) and inhibited atherosclerotic plaques formation along with increased antioxidant selenoenzymes glutathione peroxidase (GPx) activity(31%, $P<0.05$), the GSH concentration (18%, $P<0.05$) and HO-1 expression(23%, $P<0.05$) in artery tissue. Contrarily, decreased ROS generation and lipid peroxidation (LP) levels were observed. Se supplementation also showed a significant enhance in nuclear factor-erythroid 2-related factor 2 (Nrf2) expression and transcription action along with significant increases in Akt and GSK-3β phosphorylation, and decrease in nuclear accumulation of Fyn (a Nrf2 negative regulator). In vitro study with endothelial cells showed that high glucose-induced oxidative stress could be completely prevented by simultaneous Se supplementation. Furthermore, increased phosphorylation of Akt and GSK3β and Nrf2 transcription action by Se addition were also blocked by the Akt inhibitor MK2206 and Akt negative regulators PTEN, which was accompanied by increase in nuclear accumulation of Fyn.

CONCLUSIONS It is suggested that Se is required for maintaining antioxidant activation through the Akt/ GSK3β/ Fyn -Nrf2/ axis in diabetic condition. Se supplementation may be useful for preventing from atherosclerosis development in diabetes.

GW26-e1008

Comparison of Invasive Versus Conservative Strategy for the Treatment of Diabetes Mellitus with Acute Coronary Syndromes: A Meta-Analysis of Randomized Controlled Trials

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OBJECTIVES The aim of this study was to compare the outcomes of invasive versus conservative strategy in diabetes mellitus (DM) patients with acute coronary syndrome (ACS).

METHODS 9 randomized, controlled trials (RCT) involving 1,789 patients were included. We evaluated the risk ratios (RR) and 95% confidence intervals (Cls) of myocardial infarction (MI) following invasive versus conservative strategy for DM patients with ACS as primary endpoints. The rates of death and rehospitalization with ACS were secondary endpoints.

RESULTS In a comparison of conservative strategy, the rates of MI (RR: 0.71; 95% CI: 0.55 to 0.92, $p < 0.01$) and rehospitalization with ACS (RR: 0.75; 95% CI: 0.61 to 0.92, $p < 0.01$) of invasive strategy for DM patients with ACS were significantly lower. There was no significant difference in death (RR: 1.01; 95% CI: 0.70 to 1.45, $p > 0.05$) between invasive and conservative strategy groups.

CONCLUSIONS In DM patients with ACS, invasive strategy comparing with conservative strategy reduced the risk of MI and rehospitalization with ACS.

GW26-e2329

A seven-period, self-crossover, open-label clinical trial to assess the effect of AEML on the Glycaemic Index of common carbohydrates

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OBJECTIVES AEML is the aqueous extract from Mulberry leaf which can inhibit the active of α- Glycosidase. This study is to investigate the effect of AEML on the Glycaemic Index (GI) of common carbohydrates in Chinese healthy subjects.

METHODS A seven-period, self-crossover, open-label clinical trial was performed to 15 healthy male and female volunteers. In each period, all the subjects received a mixture of sugar + test substance dissolved in water as a meal. Reference meal is Glucose 50 g, while test meals are Glucose 50 g + AEML 750 mg, Maltose 50 g + AEML 750 mg, Sucrose 50 g + AEML 750 mg and Maltodextrin 50 g + AEML 750 mg. Each subject randomly received the reference meal three times and the test meal once in a cycle. There was a 2-day washout period between each administration. The blood samples were taken from finger-prick at -15 min, 0 min and intervals of 15, 30, 45, 60, 90 and 120 min after consuming the test/reference meals. These incremental area under the curve (IAUC) of blood sugar-time curve were inspected about reference meal and test meals.

RESULTS The GI of common carbohydrates treated by AEML is great difference compared with no AEML groups. The IAUC values for Glucose, Glucose + AEML, Maltose + AEML, Sucrose + AEML and Maltodextrin + AEML were 181.95±53.56, 170.84±42.28, 107.13±54.68, 90.40±32.30, and 126.73±36.00 (mmol/L·min), respectively. Furthermore, the GI value of Glucose, Maltose, Sucrose and Maltodextrin were 94, 59, 50 and 70, less than the corresponding reported value 100, 105, 65 and 110, respectively.

CONCLUSIONS AEML can reduce the GI level of Glucose, Maltose, Sucrose and Maltodextrin in healthy male and female volunteers. It has potential to serve as a good food additives for diabetic or prediabetic patients.